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ORIGINAL ARTICLE

Social issues, crisis, and care coordination: First responders experience responding to people affected by methamphetamines

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Abstract

Methamphetamines remain a public health problem due to the extensive burden of illicit drug use on society. Callout events in the pre-hospital environment related to methamphetamine use is increasing. In addition, there has been an increase in reported mental health side effects and breakdown in relationships and social networks. Descriptive phenomenology research design was undertaken and data analysed using thematic analysis. Semi-structured interviews were utilized to collect data exploring the experience of first responders attending callouts to people affected by methamphetamines in the pre-hospital environment. Interviews included paramedics (8) and police officers (10) from across Australia. Overall, participants reported responding to people affected by methamphetamines was complex in nature. Complexity was affected by extensive social circumstances, people presenting in states of crisis, lack of coordinated approach, and unsuitable care environments. The social impact of methamphetamine addiction is extensive. Staff working as first responders have an opportunity to help reduce the social impact and crises, referring people to follow-up care and drug and alcohol support services. Further research is needed to determine if a standardized approach, between first responders and EDs, should be developed to help streamlines services and improve how the individual services respond as a group to people affected by substances.

KEYWORDS

emergency care, first-responders, methamphetamines, pre-hospital, qualitative research.

INTRODUCTION

Despite the reported reduction in methamphetamine use, methamphetamines remain a public health problem due to the extensive impact of drug addiction on the user (social, physical, and psychological impact; Degenhardt *et al*., 2008), families, law enforcement, and health care systems (Vearrier *et al*., 2012). Methamphetamine use is linked to increased rates of mental illness and psychosis, aggression and violence, insomnia (Cloutier *et al*., 2013; National Institute on Drug Abuse, 2013; Vearrier *et al*., 2012), an increase in the reported breakdown in relationships and social networks, and participation in risky behaviour and criminal activity (McKetin *et al*., 2017).

Police and paramedics are often required to co-attend methamphetamine-related callout events due to drug-related side effects, staff safety concerns, violence and aggression, and mental health issues (Cleary *et al*., 2017; Jones, Usher, & Woods, 2019; Jones, Woods, *et al*., 2019; Usher *et al*., 2017). Ambulance attendances across Australia for amphetamines accounted for 10.7 to 27.4 per 100 000 population (Australian Institute of Health & Welfare, 2021) with Victoria reporting ambulance attendances increased over 200% between 2011/12 and 2016/17 (768 to 2514) (Jones, Usher, & Woods, 2019). Additionally, the number of methamphetamine-related hospitalizations increased in 2019/20 to 14 053 from 9317 in 2015/16 (Australian Institute of Health and Welfare, 2022).

Due to the increase in attendances and hospitalizations related to methamphetamines and the reported complex nature of methamphetamine callouts, it is timely to explore the experiences of first responders to determine the impact on personnel, resources, and training. First responders are defined as any personnel who initially respond to any emergency or life-threatening situation such as fire fighters, paramedics, and police offices (Commonwealth of Australia, 2018). Whilst police and paramedics are separate first responder services, they are often required to co-attend methamphetamine-related callouts in the pre-hospital environment. There is a dearth of evidence focusing on both police and paramedics' experience as first responders; to our knowledge, this study is the first study to explore the experiences of police and paramedics responding to people affected by methamphetamines. The knowledge generated by this study will provide an understanding of the complexity and challenges faced by staff and to assist with resource allocation and funding and help identify future areas of research. The aim of this study is to explore the experiences of paramedics and police who are called out to people affected by methamphetamine and required transport to an ED.

METHODS

Design

This study employed a descriptive phenomenology design, using semi-structured interviews for data collection to explore the participant's experience of the phenomenon. Descriptive phenomenology arises from Hesserl's work and allows for subjective exploration of the phenomena under investigation (Willis *et al*., 2016).

This paper is part of a larger sequential mixed methods doctoral project involving two phases of data collection. Phase one used a quantitative approach to explore the impact of methamphetamines on emergency services. Phase two adopted a qualitative approach to explore first responder's experience responding to people affected by methamphetamines who required transport to an ED.

Recruitment

A purposive sampling technique (Creswell & Plano Clark, 2018) was utilized to recruit front line police and paramedic participants nationally via two methods:

1. An expression of interest in participating in interviews was advertised at the completion of a survey conducted in phase one data collection in the larger doctoral project.
2. Social media adverts were circulated asking police and paramedics to contact the research team to participate in interviews.

Inclusion criteria: potential participants were required to be currently working as a frontline police officer or paramedic in Australia and have experience responding to people under the influence of methamphetamines who required transport to an ED.

Ethical considerations

University of New England's research ethics committee granted ethical approval (HE18-209). Participation was voluntary. Before arranging an interview, the research team provided the participants with an information sheet, telephone transcript, and consent form. Participants provided the research team with written consent prior to interview, which was confirmed verbally. Consent included audio recordings of interviews for transcription and the use of de-identified quotes in research publications (articles, conferences materials, and thesis).

Data collection

Data collection occurred in Australia over 14 months (May 2019–July 2020). Standard questions were included in the semi-structured interviews, which were developed prior to recruitment. The questions were designed using previous research and knowledge to enable the research team to explore individual police and paramedic experiences responding to people under the influence of methamphetamines (Kallio *et al*., 2016). In addition, semi-structured interviews ensured the research team was able to collect similar data from participants for reporting purposes but still allowed for follow-up questions tailored specifically to the participant's experiences (DeJonckheere & Vaughn, 2019; Nowell *et al*., 2017). Table 1 provides the pre-developed questions asked of each interviewee.

The first author conducted all interviews over the phone at a time and date that was suitable to the participant. Interviews were audio-recorded and transcription was undertaken by a transcription service approved

TABLE 1 Example of interview questions

Can you tell me about your experiences responding/managing people under the influence of methamphetamines requiring transport to an ED?
Can you discuss the nature of difficulties you have experienced when responding to people under the influence of methamphetamines and how they differ from other drugs or mental illnesses?
What are some of the reasons or issues you are called out to persons under the influence of methamphetamines?
Can you talk about what may help you manage/care for offenders/patients under the influence of methamphetamine-related presentations better? Is there any further training or education you feel you need to help you manage clients/patients under the influence of methamphetamines?

by the university. Transcriptions were reviewed by the researcher for accuracy. Data on participant characteristics (profession and location) were gathered at the commencement of the interview. Eighteen interviews were conducted, all participants were male, and 405 min of data was collected (average of 22.5 min). Table 2 summarizes the participant characteristics.

Data analysis

Thematic analysis was employed to analyse the transcribed interviews; this form of analysis allows the researcher to explore and describe the lived experience of the phenomena (Sundler *et al*., 2019), which aligns with the descriptive phenological design of the study. Analysis followed a six-step process (familiarization with the raw data, identification of initial codes, searching for themes, developing connections between themes, reviewing and defining themes and reaching a consensus of themes by the research team) ensuring a rigorous and high-quality analysis occurred (Clarke & Braun, 2017; Nowell *et al*., 2017). Data collection continued until data saturation was reached, no new data generated or new themes identified (Fusch & Ness, 2015). The first author read the interview transcripts and field notes several times whilst listening to the audio recordings to ensure the participants' voices guided the manual construction of codes (Greenwood *et al*., 2017), ensuring the codes were valid and derived directly from the data (Sundler *et al*., 2019). The research team meet to discuss and confirm the codes which were then used to electronically code all interviews using NVivo. The research team meet regularly to discuss the grouping of codes into subthemes and themes, until a consensus was reached (Nowell *et al*., 2017). Once the themes and subthemes were decided, the first author compared police and paramedic participant responses to determine any similarities and differences.

TABLE 2 Participants and location of employment

	Rural/remote	Metropolitan	Both
Police ($n = 10$)	3	7	
Paramedics ($n = 8$)	2	3	3

RESULTS

All participants reported encountering methamphetamine-related callouts weekly and wished to share their experiences responding to these callouts. Analysis revealed responding to people affected by methamphetamines was complex, involving social issues, medical crisis, and issues with care environments and care coordination. Hence, the research team identified the overarching theme as 'Ice: Complexity of care challenging police and paramedic first responders' with two main themes: (1) Responding to violence, abuse, and danger: Safety, challenges, and managing the risk and (2) More than just drug-related presentations: Social issues, crisis, and coordinating care. Due to the richness of data and to ensure the reporting did justice to the participant's voices (Jackson *et al*., 2014; Janghorban & Azarkish, 2019), the main themes will be reported in two separate papers. This paper presents the findings for '*More than just drug-related presentation: Social issues, crisis, and coordinating care'* (theme 2) (highlighted in blue in Table 3: Complexity of care themes). This paper presents a narrative around police and paramedic experiences in relation to the identified social issues, crisis situations and coordinating how they care and respond to people affected by methamphetamines. Participant quotes are used to illustrate themes and subthemes, and additional quotes for each theme are included in a Table S1. For each quote, police are identified as PP, and paramedics are identified as PA.

There were three subthemes identified for theme 2: (1) Methamphetamine addiction: Crises and social issues, (2) Understanding: challenging stigma, and (3) Care coordination and care environments.

Methamphetamine addiction: Crises and social issues

Analysis revealed people affected by methamphetamines often presented with more than just drug-related side effects (such as violence or psychosis); they often presented with complex social issues or in states of crisis. States of crisis included medical, mental, and personal distress involving extensive social issues. Social issues included: engaging in criminal behaviour to sustain addiction, spiralling behaviour and social

TABLE 3 Methamphetamines: complexity of care

Overarching theme	Themes	Sub themes
ICE: Complexity challenging police and paramedic first responders	Responding to violence, abuse, and danger: Safety, challenges and managing the risk	A focus on safety: Protecting yourself and unsafe environments for families.
		Minimizing the risk: Responding to violent, abusive behaviour
		Challenges responding to methamphetamine intoxication
	More than just drug related callouts: Social issues, crisis and coordinating care	Methamphetamines Addiction: Crises and social issues
		Understanding: Challenging stigma
		Care coordination and care environments

upheaval, breakdown in relationships, a lack of social support/network, and families at breaking point. Paramedic participants reported medical and mental health crises, in addition to personal distress and social issues, whilst police participants reported on social issues.

Paramedic participants reported that binge drug use often resulted in people presenting in states of crisis. Binge drug use is when someone continually uses methamphetamines over several days, often going without sleep which affects their physical health (exhaustion and adverse cardiovascular side effects) and mental health (instigating excited delirium or a psychotic episodes),

> called us because they're now sleepless and anxious, or complaining of cardiovascular side-effects like chest pain and things like that after big benders. Frequently those sleepless or chest painy type patients have some element of psychosis as well, because to get to that stage, we're talking probably three or four days of meth without any proper breaks. Even just the sleepless nature of that makes them pretty prone to abnormal behaviour.
>
> (PA14)

Medical crises involved severe and rapid medical deterioration. Paramedics reported this was related to people binging on methamphetamines as less likely to manage their own health and medical conditions or failing to notice they were sick.

> ….they can also be clinically very unwell. A number of patients that I've seen in the last six months have been quite septic and quite far progressed down that septic shock pathway. Because of their level of drug intoxication over I guess a protracted period of time they've not taken care of their own healthcare needs and it's got to that point where they're actually really clinically quite unwell with a challenging prognosis and a long period of time to recovery from their underlying physical illness as well as the drug intoxication.
>
> (PA18)

Additionally, people with a history of methamphetamine addiction may have had a negative experience with either the police or paramedics, resulting in a lack of trust or willingness to call for help when required, which may result in rapid medical deterioration.

> …their own experiences and there are trust and confidence issues with government services. So, they may have been in contact with either police or ambulance that have been judgemental or treated them quite poorly or harshly, which gives them a mistrust, I suppose. That also extends to emergency departments as well.
>
> (PA16)

Methamphetamine addiction or long-term methamphetamine use was reportedly linked to increased social issues by both police and paramedic participants. Due to long-term use and trying to sustain a drug habit, people who used methamphetamines often ended up engaging in criminal activities or other socially unacceptable behaviour.

> They then embark sadly on trying to sustain that drug substance dependency by either dealing themselves, or stealing, or going to criminal activities, or having to sell themselves, so prostitution plays a part as well..
>
> (PA16)

Over time, this leads to increased criminal activity, more risky endeavours to sustain their addiction and more dangerous lifestyle choices, such as drug trafficking. Both police and paramedics reported this had a significant social impact on the person.

> He was a motorcycle gang enforcer, so we've met him under three different situations where he was under the influence of methamphetamine. The first one was post him attempting to assault EMS workers on the side of the road… required physical restraint and chemical sedation. We met him about four weeks later when he was transporting back $200,000 worth of methamphetamine in the car…the third time he was actually going to jail and there was concern that some of the people he may have hurt in the past were going to kill him in jail… six weeks prior to this he actually attempted to hurt or kill his friends and managed to chop three of his own fingers off with a knife.
>
> (PA16)

Even if the person had used methamphetamines without social or considerable negative impact on their lifestyles for years, eventually there would be some negative social impacts as a result of spiralling behaviour. Spiralling behaviour included using more and more substances to deal with their life, which ultimately impacted their work and personal lives.

> Sooner or later, they will all come crashing down. I've spoken to people who have managed to successfully use meth for 10 or

> 15 years and then finally there'll be a trigger in their life. Something will happen that will cause them to spiral downhill, use more and more and more, and then before they know it, they're living out of a car and their mates have stolen all their money and they've had their phone stolen and all sorts of stuff.
>
> (PP8)

If the spiralling behaviour continued, it would lead to the destruction of their normal life resulting in unemployment and homelessness further exacerbating social circumstances.

> I have a lady, about 40, that I'm dealing with now that's a long-term meth addict. But she's at the downward end of her use of it where she's in a position in life where she's no finances, lost the house, lost her jobs. In our contacts with her, she's just dishevelled, skin sores, lost weight, grinding her teeth.
>
> (PP4)

Both police and paramedics reported people who use methamphetamines often presented with no social support or social network. This meant the person had limited help or support to manage their drug addiction.

> Generally, the people that we meet who report some sort of substance dependency or use have a number of things going on. Again, we involve getting connection from their social network, so we don't have a lot of people around them to support or help them.
>
> (PA16)

Drug addiction has an impact on more than just the people engaging in drug use. Often there are broader societal impacts. Police participants reported a considerable amount of the criminal behaviour was related to an underlying drug connection, with crime linked to people trying to sustain their drug addiction (such as theft and property damage) or violent behaviour resulting from drug side effects.

> property-related crimes, your thefts, your burglaries, your robberies, without having the statistics and the figures at hand, I would say a significant proportion of those crimes are caused by underlying drug issues. The crimes are committed to fund drugs, to pay back drug debts….
>
> (PP10)

In addition to criminal behaviour affecting society, police, and paramedics reported seeing negative impacts on families. Families living with drug addiction were dealing with the negative social issues and aggressive behaviour regularly. Paramedic participants reported families are sometimes at breaking point, not knowing how to deal with the drug addiction or prevent the spiralling behaviour.

> He has an issue of ADHD, but recently lost his job, he reckons because his younger brother had mentioned something to his boss. He then lost his licence to either drink-driving or drug-driving under methamphetamine and he'd also recently assaulted his dad with a knife and assaulted his brother physically. His poor nurse mum was basically just broken and beside herself, with nowhere else to go or nothing she could do to prevent his demise.
>
> (PA16)

Understanding: Challenging stigma

Despite the complex nature of callouts, some participants demonstrated an understanding of people who used methamphetamines. This understanding was reflected in how participants reportedly treated people under the influence of methamphetamines. Drug addiction was seen as an illness; people under the influence of methamphetamines were shown respect and non-judgmental approach.

Police and paramedics reported that the negative behaviour and side effects displayed by people affected by methamphetamines resulted from drug use and were not a reflection on the person themselves.

> I need to be conscious that they're in their own world and that, despite what I'm doing, they may be perceiving, they're likely to be perceiving things differently. …it's about hallucinating, paranoia…I believe that they can't even control what they're doing if they wanted to in as far as complying with police. It's like their body just won't sit still. Yeah, it's like they physically can't comply or physically can't stay still or physically cannot do something.
>
> (PP4)

Paramedic participants in this study reported drug addiction is an illness that requires treatment and respect for the patient. Respect was expressed as the need to treat all patients how you would want to be treated in that situation:

> I think it comes down to experience dealing with them and realising that it's an addiction and an illness. It's not, they're not being aggressive to you on purpose. If you

> speak to them two or three days later after they're off the meth, they can't remember a thing they've done. It's not an excuse. But it's not a deliberate act either. I think most of it just comes down to the more experience you get with these patients and treat them like you would like to be treated, the better, for yourself and for the patient. It's supporting, it's being able to support the patients that you really need to put in the back of a police wagon.
>
> (PA12)

Paramedic participant (PA15) challenged judgement, reporting due to life circumstances anyone could develop a drug addiction;

> …but it's, everyone's got a story, so that's what I've learned. Things that you learn as you go along, and so it's really easy to judge and go, yeah, yeah, but…if someone, at some stage of my life said, try this it's great, do you know what I mean? Maybe you try it and it is great and you don't see the long-term thing, do you?

Some participants explained they wanted to understand why people used drugs and to help the people manage their addiction. Participants would offer connections to services to help people get off drugs; however, participants recognized only a few people engaged in services to manage their drug dependency.

> I do wonder what's brought them there and what if anything I could do to help them, but I guess it's the old rule with policing that you don't learn until you get in that a lot of people just don't want help…There are people that want help….but there's the majority out there that keep ending up in the back of a paddy wagon and then when you offer them help or you offer to do things for them…
>
> (PP8)

Care coordination and care environments

Co-attendance of police and paramedics required two separate services to interact, make decisions and transport the person to an ED, adding to the complex nature of responding to people affected by methamphetamines. There were some issues or areas of care coordination that police and paramedics reported required development, including a lack of a coordinated approach and no clear policy or guidelines directing who or how to transport people to ED. Police and paramedic participants reported similar responses to this subtheme.

Participants reported a lack of a current standardized approach, which provided clear guidance on how the two services should co-attend to people affected by methamphetamines. This needed to include an overarching decision from the government on how the services coordinated care to guide management.

> I think there needs to be a decisive decision amongst government bodies on how to handle it…it's more common for an ambulance to call for police attendance prior to going to a job that they know that there could be a significant risk. I think it's a whole of government type approach needs to be used while dealing with these people…
>
> (PP1)

Due to the lack of a clear guideline or pathway, issues around transport often arose. There was no pathway/guideline to assist police and paramedics in deciding who and how transport would occur. Both police and paramedics reported the need for a clear and flexible guideline, which both services could use to help coordinate care.

> There's no structured process. It's basically every single patient you're assessing with your experience and a lot depends on who is on scene and who the police are. The police sometimes get it and they sometimes don't. Sometimes we just say we're not transporting, that the patient is too aggressive and we're not interested and sometimes the police kick back and sometimes they are really happy with that….a good guideline would be awesome but you could never always stick to it.
>
> (PA11)

A combined mental health nurse and police approach was trialled in some States. Paramedic participants working in these areas felt it improved patient care management and resulted in a more person-centred approach. This approach also ensured additional clinical skills were available to manage common mental health side effects. PA11 shared their experience with combined attendance of police and mental health nurses, stating:

> At the moment [state removed] has got a bit of a trial going with the police and a mental health nurse. They are fantastic at treating these patients because they do it regularly, it's their speciality and they're getting used to the community side of it. It works really well. Whereas we're just pitching up as two

> paramedics with two random coppers off the beat who are trying their best but it's not our pure skillset. Just like any specialist, they can probably do it better so we would like to see more and more of those style of systems…

Police and paramedics also reported care environments required development. Care environments that required improvement included ED environments, vehicles used for transport, and rural areas. EDs were reported as under-resourced when responding to methamphetamine presentations and in particular, methamphetamine related violence. Police participants felt all EDs required a safe room that was separate from other ED patients, where drug-affected people could be monitored and staffed with security officers. Recalling their experience,

> The health care system is extraordinarily under-resourced, if only just with physical assets like ED surely needs a secure room that we can take these people to… I think every ED without fail needs to have a secure and safe room where we can sit down with these people and have them at least not in the public area and not in the treatment area…but that goes for mental health patients as well as drug-affected persons… We also need far higher levels of security at the hospital for when we do leave people there.
>
> (PP10)

Paramedics also reported EDs were unsuitable. EDs are over stimulating and chaotic, which is the wrong environment for methamphetamine intoxicated people. People affected by methamphetamines often require a less stimulating environment, especially if the person displays signs of psychosis.

> Yeah, we're taking them to the wrong place. We're taking them to ED, we should be taking them to a mental health specific ED… you are 100 per cent treating it wrong. You're taking them to a bright place with lots of people and tonnes of stimulation when you actually need the opposite. You need to get these to…guys to sleep…. So, it is the wrong place and there's too much risk in ED, there's too many people that you're exposing to a psychotic patient who's horrifically strong and yeah, it's all wrong.
>
> (PA11)

EDs that did not have a safe room for violent or psychotic patients required the person to be kept in the back of a police pod, where it was safer for the person and other patients in ED. However, there was concern over the welfare of the person being left in that situation for an extended time,

> Usually for someone who's violent or drug-induced psychosis, we would leave them in the van. We don't have them in the emergency waiting room. Obviously, that's partly for the other public too…if you take your kid to the hospital in the middle of the night for the flu or a broken finger, you don't really want the coppers sitting there with a meth addict screaming at everyone.…That's about, that's why I say our policies hamper us a bit, because in order to that we try to have some peace and quiet in the hospital and reduce the risk to everybody, really, they need to sit in the vans out the front, which can take hours. It's totally inappropriate to have someone who needs help sitting in a van for four hours. But there's no other way to do it safely.
>
> (PP3)

This extended wait time reportedly increased agitation and the risk of escalating behaviour, resulting in assessment and treatment delays.

> I think the best-case scenario for us is if we take them into…protective custody for the drug use or mental health…we do take them to a medical facility, then they need to be seen within a reasonable amount of time for a decision to be made as to what's going to happen with them. At the moment we seem to be struggling with waiting around….Nothing seems to be occurring in regard to their welfare or their safety. We're just sitting on people and telling them that they can't leave and they are getting agitated. So I think the best option is if they had a process where there'd be a time limit for someone to just make an assessment, whether it's a partial assessment or a full assessment….Then we can decide what the next course of action is going to be and if the police are going to stay there, or if the police are going to be able to leave depending on what the doctor says.
>
> (PP7)

Paramedic participants suggested a separate triage area for drug intoxication and mental illness was required in EDs with fast-tracking for rapid triage and assessment. This could help improve wait times for patients and police/paramedic staff required to be in ED until the person is assessed. In some areas, this was already in place with participants identifying how it

helped to improve and streamline the approach to care between the services.

> They did introduce at [location removed] a nurse navigator, as well as a mental health nurse who was a rapid assessment person. That has helped, but it isn't 24/7. I think the ED staff would like to see something along those sorts of lines. I think the last one would be just having some sort of area that is a direct triage, where we go with people with heightened moods and elevated behaviours…Taking them to the ED triage, where we have everything from sepsis concerns to paediatrics to chest pains to whatever else and having 10 ambulances lined up in the corridor, it's a diabolical combination to take someone who's elevated there and then subsequently requires physical restraint in front of all of these people. So, if we had some sort of triage area for ABD [acute behavioural disturbances], I think that would be a helpful thing.
>
> (PA16)

Police and paramedic participants reported transport vehicles were not suited to transporting people affected by methamphetamines displaying violent or psychotic behaviour. Police pods, whist designated safe, increased the risk to the person when their behaviour escalated, resulting in injury.

> Obviously, what goes along with that is, when they're in the back of the pod, even if they're handcuffed, they bash their heads on the side of the pod, cause themselves injury…, it's not uncommon to have to stop halfway… and have to try and rip them out of the pod again because they've started self-harming and then that goes up to the next level.
>
> (PP8)

Paramedic participants also highlighted concerns with transporting people affected by methamphetamines in the back of an ambulance. The design of an ambulance vehicle is suited to the treatment of medical patients, with lots of equipment (which the patient can grab and use to cause injury). Participants felt they are unsafe to transport people displaying violent or psychotic behaviour, which required specialized vehicles specifically designed for transporting these people.

> Also, I think we need to be looking at our transport options. A normal ambulance where we have restricted space, which is set up for medical conditions mainly not psychotic patients, is not really appropriate. We're trying to do too much with the one vehicle. We should be leaving these people on scene until the right vehicle comes for these patients with the right staff on it as well.
>
> (PA11)

Responding to people affected by methamphetamines in rural and remote locations was riskier than in metropolitan areas due to limited resources available, including staff, facilities, and services.

> Unfortunately, our hospital has no real security. It's unfortunately a combination of a security officer combined with…orderlies now. It's very unsafe for them, so they need to call upon us pretty much any time they've got someone who's come in who's drug affected and going off.
>
> (PP3)

With limited police on duty, if they were tied up in ED or responding to methamphetamine intoxication, they had limited resources to respond to other police jobs in the community. Even in larger regional areas, this was considered an issue by police participants.

> I work in a major regional area, so we've got a reasonable size population with a high volume of work for police. So when we do have staff… one vehicle with two officers, if they're taken off the road to deal with mental health or to deal with drug psychosis and they're tied up for one to five hours at the hospital…That's two officers that aren't dealing with potentially six, seven, eight jobs responding to members of the public that require police. It can be one, two or even three vans at a time being stuck at the hospital dealing with three different individuals.
>
> (PP7)

Paramedic participants identified a lack of mental health support services available in rural/remote areas. This lack of services often resulted in patients not engaging with services or leaving family support to undertake rehabilitation and mental health care, disconnecting them from country.

> Generally, if they have been sedated and they've had a psychotic episode, they'll go to a mental health facility and I think right there is the …. biggest fail in our system… they are flown out. Our nearest mental health system is 600 kilometres away and it's only a small one. If we're talking about

> Indigenous, that means they are taken out of country, they're taken away from family, they are taken out generally sedated. If not sedated, they'll have a calmative at least, shackled to the stretcher, which is obvious; they are in a small aircraft. Then they wake up and they are a minimum of 600 kilometres away from country.
>
> (PA13)

In addition to the lack of mental health services, paramedics reported a lack of addiction treatment services in rural areas.

> ..the other thing that's really noticeable is the distinct lack of longer-term treatment options for these patients once they're in the hospital setting. …in terms of follow up for them and specifically if they want to get off those drugs and they want access to a residential rehab type facility, opportunities for that are very, very, very limited in regional [State removed].
>
> (PA18)

A reduction in available specialized staff was reported in rural areas compared to metropolitan areas. Paramedics reported that whilst metropolitan areas had access to intensive care paramedics and additional staff, rural areas had limited options to call extra staff or specialized services. PA18 commented,

> We do have intensive care paramedics spotted around various parts of regional [state removed]. But they're not nearly so common and whereas in Metropolitan [city removed] they're sort of established …. a minimum number ….of those extra qualified staff on any point in time. We don't have that in regional [state removed]. So, we're stuck with our first- and second-line chemical sedation options which are largely effective, but we do occasionally exhaust their effectiveness and get to a point where benzos alone are not quite adequate to manage these patients. So that's something that's noticeable.

In addition, in some States, paramedics in rural/remote locations were required to work with volunteers instead of a second paramedic. Some volunteers were experienced, whilst others lacked the situational awareness and the skills required to respond to complex situations. PA15 shared their experience working with volunteers.

> We managed to get the vehicle stopped, bear in mind…I was working with a volunteer, so the volunteers can be a real help or a real hindrance, as opposed to working with a trained paramedic, because you're both on the same wavelength, when it comes to safety and danger and stuff, so I had to tell this volunteer to calm down….

The physical and emotional toll could be taxing for paramedics when working on shift with a volunteer when experienced support was not available.

> Yeah, so where I am is quite remote. I'm about 1800 kilometres away from [metropolitan name removed]…the nearest…other ambulance depot to me is two and a half hours away. We operate with paramedic volunteer crews which is I think we are one of only, I think we are the only service that do that over here in the [state removed]. So obviously as a paramedic, you have the lead in all patients that you attend. I've seen in the seven and a half years I've been in my position where I am, an increase in numbers of patients that I deal with…
>
> (PA13)

DISCUSSION

The findings from this study identified methamphetamine-related attendances in the pre-hospital environment as complex. Complexity of care can be defined as 'a being or an entity composed of many elements that relate and influence one another' (Guarinoni *et al*., 2014, p.226). In the case of complexity of care related to methamphetamine use, the findings in this study report callouts to people with methamphetamine intoxication are more than just drug related but often involving a myriad of issues. These include presenting in medical and mental health crisis, lack of social support due to breakdown in family relationships, social upheaval, and personnel distress. In addition, a lack of a coordinated approach to care and unsuitable care environments reportedly affected the complexity of methamphetamine-related callouts. Previous research with health professionals supports these findings. Cleary *et al*.'s (2017) study reported that methamphetamine-related presentations are complex, linked to underlying mental illness, challenges care, and related to additional physical problems, such as trauma.

Participants in this study reported persons affected by methamphetamines engaged in a self-destructive trajectory, which resulted in patients presenting in a state of crisis. This is supported by previous research; social situations added to the complexity of caring for persons affected by methamphetamines, with participants identifying a breakdown in relationships or complex social situations, were not managed or followed up once discharged

from hospital (Cleary *et al*., 2017; Obong'o *et al*., 2017). Further negative impacts of drug addiction on social circumstances include social marginalization and isolation, increased risk of family violence, and unfavourable socioeconomic status (unemployment, increased financial debts, and criminal behaviour or incarceration) (Dyba *et al*., 2019a, 2019b). These are reportedly worse with methamphetamine addiction due to impaired ability to function in society, intoxication presenting as irritability (Dyba *et al*., 2019a) aggression and violence (McKetin, 2018), and withdrawal presenting as depression and lethargy (Dyba *et al*., 2019a). In addition to the negative impact on people who used drugs, substance abuse has a negative effect on the broader society, including families and children (Daley, 2013; Degenhardt *et al*., 2008; Lander *et al*., 2013), as well as first responders and healthcare workers.

Police and paramedics in this study reported that families living with methamphetamine addiction reached breaking point (unable to manage and cope alone), and described how people with an addiction engaged in criminal and antisocial behaviour to maintain drug addiction habits that further impacted the social isolation. Research has shown that drug addiction changes the focus of users from family to drug consumption, causing them to neglect social, family, and parental responsibilities (Dyba *et al*., 2019b); this impacts family relationships and social networks resulting in social isolation and a lack of support. A breakdown in relationships further impacts people who use illicit drugs, increasing stress, and isolation which in turn increases the person's reliance on drugs to manage life daily (Dyba *et al*., 2019b). Social networks are considered important in preventing and treating substance addiction (Dyba *et al*., 2019b). Staff working in the pre-hospital environment (police and paramedics) and acute care settings (particularly ED and mental health) are in an opportune position for early recognition of social issues and potential crises and to identify the need for further support and services. This needs to be considered when evaluating or delivering services and follow-up care in these settings. A review and evaluation of primary health care, support services, and follow-up services are needed to assist with resource allocation and funding and the development of services to help alleviate the crises and social issues associated with addiction disorders.

This present study reported that police and paramedics felt ED environments were generally unsuitable, as they were overstimulated and noisy, and had increased waiting times which increased patient agitation. Previous research supports this finding; ED spaces such as isolation rooms on their own were not effective in maintaining patient safety, and further support and resources were often required (Cleary *et al*., 2017; Usher *et al*., 2017). Additionally, EDs are not designed to manage people exhibiting violent and psychotic episodes (Oliver *et al*., 2018), and unsuitable environments are linked to increased workplace violence and negative impacts on quality patient care (Muir-Cochrane *et al*., 2018).

In addition to the need for a standardized approach to care in the pre-hospital envelopment, this present study revealed that some states used a police and mental health coordinated model of care with some success. Coordinated approaches have been trialled internationally and in some states in Australia (Bailey *et al*., 2018). Co-attendance teams were either a first responder team or a secondary response team (called out after police or paramedics had arrived) and involve mental health workers, paramedics and police (Bailey *et al*., 2018). There are significant advantages reported in utilization of coordinated response teams: reduction in the length of time spent at a response, decreased arrest rates, early rapid assessment, a decreased rate of transportation to ED, and a reduction in the burden on EDs by offering alternatives to hospitalizations (Bailey *et al*., 2018; Wheeler *et al*., 2015). However, there is no current standardized approach or guidelines to support how police and ambulance services should approach co-attendance. In addition, further exploration is required around who should be included in the coordinated approach team, such as the inclusion of drug and alcohol workers. Considering the continual interaction between the pre-hospital services and ED, the standardized care or common policy should be extended to include ED staff. Further research is needed to evaluate and review how ED and pre-hospital environments work together to manage and care for callouts/presentations involving substance use.

Strengths and limitations

The results from this study only represent the views of a small number of police and paramedic first responders in Australia. All participants were male, despite multiple attempts to recruit both female and male participant. However, all participants had extensive experience responding to people under the influence of methamphetamines, and participants were from both rural/regional and metropolitan areas. Identifying drug use is problematic, often relying on self-report from patient or relatives and clinicians' judgement (determining if the drug use is clinically significant or identifying drug use). Both methods are not 100% accurate and can result in misreporting of drug use related to presentation/callouts. In addition, participants reflected on their experience responding to persons under the influence of methamphetamines, and negative experiences managing aggression and violence may have influenced the participant's responses.

CONCLUSIONS

The social impact of methamphetamine use is extensive. Staff working in the pre-hospital environment (police

and paramedics) have an opportunity to help reduce the social impact and crises by referring people to follow-up care and drug and alcohol support services. Further research is needed to determine if a standardized approach between the pre-hospital services (police and ambulance services) and EDs should be developed to help streamline services and improve how the individual services respond as a group to people under the influence of substances. In addition, research reviewing the effectiveness of coordinated approaches (such as crisis teams, or drug and alcohol and mental health teams) responding to drug-related people in the pre-hospital environment is needed.

RELEVANCE TO CLINICAL PRACTICE

- The social impact of drug addiction is extensive; often involving a myriad of issues, such as presenting in medical and mental health crisis, lack of social support due to breakdown in family relationships, social upheaval, and personnel distress.
- Care coordination between services for complex presentations is important; a lack of a coordinated approach to care and unsuitable care environments added to the complexity of care reported for methamphetamine-related callouts.
- Drug addiction is an illness that requires treatment and respect for the patient. A coordinated model of care (combined police, paramedics, drug and alcohol services, and mental health staff) in the pre-hospital environment provides a more person person-centred approach and improved patient care.

AUTHOR CONTRIBUTIONS

Study design: RJ, CW, KU; Data collection: RJ, KU; Analysis: RJ, DJ; Manuscript preparation; RJ, KU, CW, DJ. All authors have met the authorship criteria and are in agreement with the submission and content of this manuscript.

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CONFLICT OF INTEREST

Prof. Kim Usher is the Editor-in-Chief and Prof. Debra Jackson is an Editorial Board Member of International Journal of Mental Health Nursing.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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